Full wwPDB X-ray Structure Validation Report ⓘ

Sep 19, 2023 – 10:17 PM EDT

PDB ID	:	5K3G
Title	:	Crystals structure of Acyl-CoA oxidase-1 in Caenorhabditis elegans, Apo form-I
Authors	:	Zhang, X.; Li, K.; Jones, R.A.; Bruner, S.D.; Butcher, R.A.
Deposited on	:	2016-05-19
Resolution	:	2.86 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

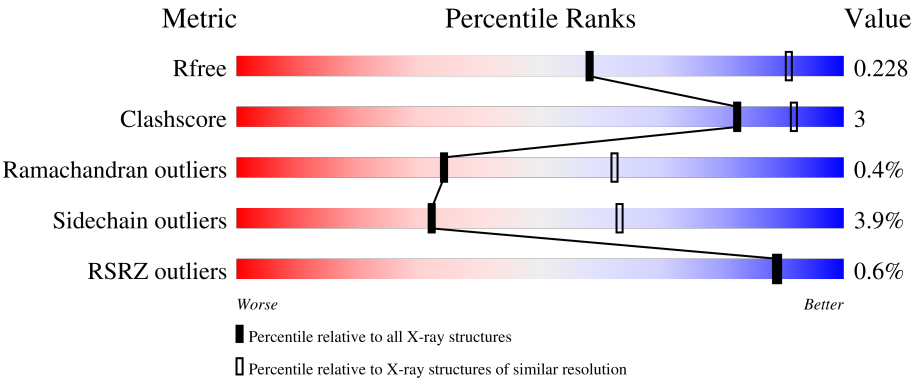
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.86 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3168 (2.90-2.82)
Clashscore	141614	3438 (2.90-2.82)
Ramachandran outliers	138981	3348 (2.90-2.82)
Sidechain outliers	138945	3351 (2.90-2.82)
RSRZ outliers	127900	3103 (2.90-2.82)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	684	82% 9% • 8%
1	B	684	85% 7% • 7%
1	C	684	84% 7% • 8%
1	D	684	84% 7% • 8%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 20012 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Acyl-coenzyme A oxidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	629	Total	C	N	O	S	0	0	0
			4998	3173	879	923	23			
1	B	633	Total	C	N	O	S	0	0	0
			5031	3196	884	927	24			
1	C	630	Total	C	N	O	S	0	0	0
			5005	3180	881	921	23			
1	D	626	Total	C	N	O	S	0	0	0
			4978	3163	876	916	23			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	675	HIS	-	expression tag	UNP O62140
A	676	HIS	-	expression tag	UNP O62140
A	677	HIS	-	expression tag	UNP O62140
A	678	HIS	-	expression tag	UNP O62140
A	679	HIS	-	expression tag	UNP O62140
A	680	HIS	-	expression tag	UNP O62140
A	681	HIS	-	expression tag	UNP O62140
A	682	HIS	-	expression tag	UNP O62140
A	683	HIS	-	expression tag	UNP O62140
A	684	HIS	-	expression tag	UNP O62140
B	675	HIS	-	expression tag	UNP O62140
B	676	HIS	-	expression tag	UNP O62140
B	677	HIS	-	expression tag	UNP O62140
B	678	HIS	-	expression tag	UNP O62140
B	679	HIS	-	expression tag	UNP O62140
B	680	HIS	-	expression tag	UNP O62140
B	681	HIS	-	expression tag	UNP O62140
B	682	HIS	-	expression tag	UNP O62140
B	683	HIS	-	expression tag	UNP O62140
B	684	HIS	-	expression tag	UNP O62140
C	675	HIS	-	expression tag	UNP O62140

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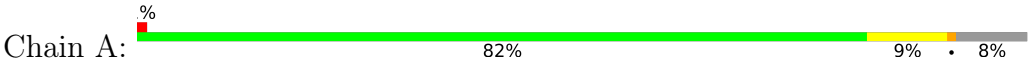
Chain	Residue	Modelled	Actual	Comment	Reference
C	676	HIS	-	expression tag	UNP O62140
C	677	HIS	-	expression tag	UNP O62140
C	678	HIS	-	expression tag	UNP O62140
C	679	HIS	-	expression tag	UNP O62140
C	680	HIS	-	expression tag	UNP O62140
C	681	HIS	-	expression tag	UNP O62140
C	682	HIS	-	expression tag	UNP O62140
C	683	HIS	-	expression tag	UNP O62140
C	684	HIS	-	expression tag	UNP O62140
D	675	HIS	-	expression tag	UNP O62140
D	676	HIS	-	expression tag	UNP O62140
D	677	HIS	-	expression tag	UNP O62140
D	678	HIS	-	expression tag	UNP O62140
D	679	HIS	-	expression tag	UNP O62140
D	680	HIS	-	expression tag	UNP O62140
D	681	HIS	-	expression tag	UNP O62140
D	682	HIS	-	expression tag	UNP O62140
D	683	HIS	-	expression tag	UNP O62140
D	684	HIS	-	expression tag	UNP O62140

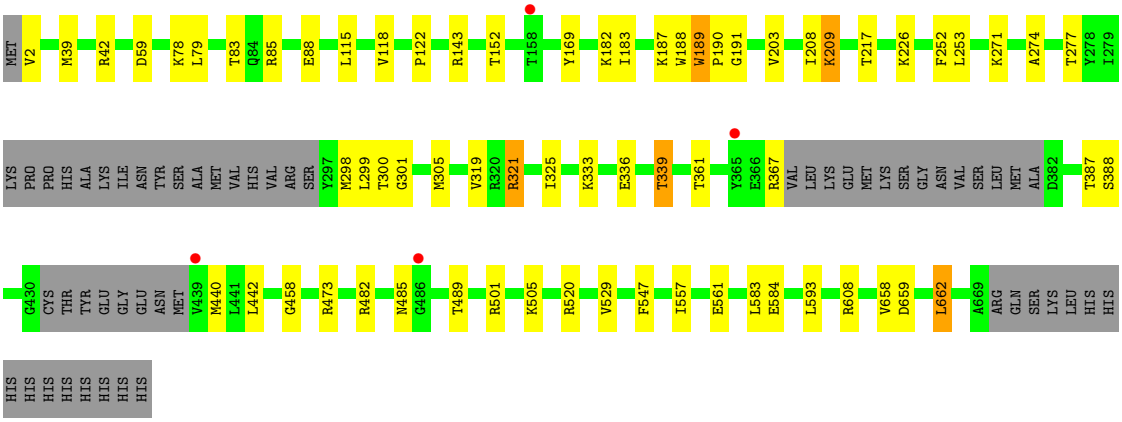
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Acyl-coenzyme A oxidase

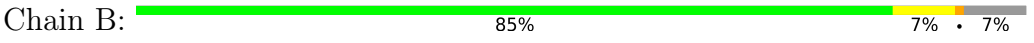
Chain A:

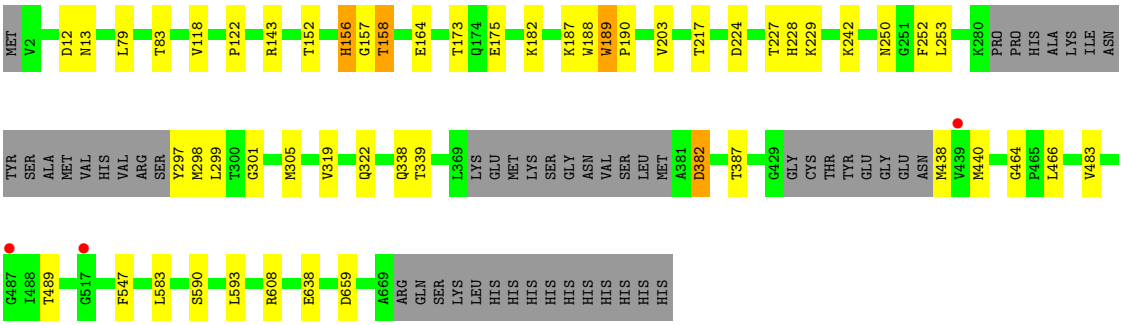




• Molecule 1: Acyl-coenzyme A oxidase

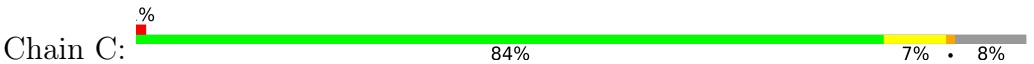
Chain B:

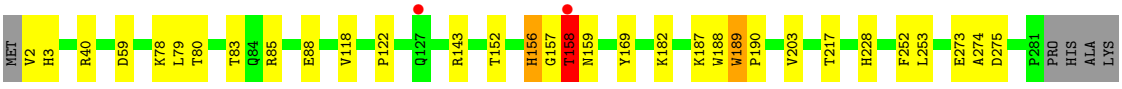


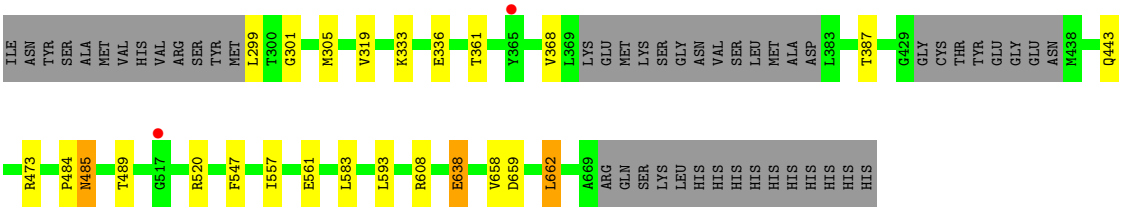


• Molecule 1: Acyl-coenzyme A oxidase

Chain C:

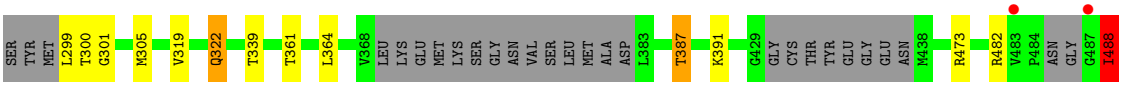


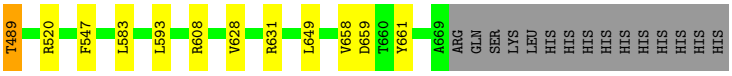




• Molecule 1: Acyl-coenzyme A oxidase

Chain D:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	80.43Å 140.55Å 131.34Å 90.00° 91.18° 90.00°	Depositor
Resolution (Å)	48.85 – 2.86 48.85 – 2.86	Depositor EDS
% Data completeness (in resolution range)	99.8 (48.85-2.86) 99.8 (48.85-2.86)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	0.16	Depositor
$< I/\sigma(I) >$ [1]	2.80 (at 2.86Å)	Xtriage
Refinement program	PHENIX 1.10.1_2155	Depositor
R, R_{free}	0.216 , 0.226 0.217 , 0.228	Depositor DCC
R_{free} test set	3598 reflections (5.34%)	wwPDB-VP
Wilson B-factor (Å^2)	36.4	Xtriage
Anisotropy	0.491	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 11.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.056 for h,-k,-l	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	20012	wwPDB-VP
Average B, all atoms (Å^2)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.67% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.30	0/5099	0.50	0/6893
1	B	0.29	0/5132	0.50	0/6937
1	C	0.29	0/5106	0.50	0/6903
1	D	0.29	0/5077	0.50	0/6861
All	All	0.29	0/20414	0.50	0/27594

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4998	0	5010	35	0
1	B	5031	0	5054	27	0
1	C	5005	0	5034	29	0
1	D	4978	0	5006	23	0
All	All	20012	0	20104	102	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (102) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:321:ARG:HG2	1:A:321:ARG:HH21	1.61	0.63
1:B:227:THR:HG23	1:B:229:LYS:H	1.65	0.61
1:B:224:ASP:HB3	1:B:227:THR:HG22	1.84	0.60
1:A:458:GLY:HA2	1:C:561:GLU:HG2	1.86	0.58
1:A:339:THR:HG21	1:B:438:MET:HG2	1.88	0.56
1:D:79:LEU:O	1:D:83:THR:HG23	2.07	0.54
1:B:173:THR:O	1:B:175:GLU:HG3	2.08	0.54
1:C:156:HIS:HA	1:D:322:GLN:HE22	1.73	0.54
1:D:188:TRP:O	1:D:189:TRP:HB2	2.08	0.53
1:B:79:LEU:O	1:B:83:THR:HG23	2.08	0.53
1:B:583:LEU:HD11	1:B:593:LEU:HD22	1.90	0.53
1:A:188:TRP:O	1:A:189:TRP:HB2	2.09	0.53
1:C:188:TRP:O	1:C:189:TRP:HB2	2.08	0.53
1:A:79:LEU:O	1:A:83:THR:HG23	2.08	0.52
1:A:367:ARG:HB3	1:A:367:ARG:NH1	2.25	0.52
1:C:583:LEU:HD11	1:C:593:LEU:HD22	1.92	0.52
1:C:79:LEU:O	1:C:83:THR:HG23	2.09	0.51
1:B:187:LYS:HB2	1:B:253:LEU:HB3	1.91	0.51
1:B:382:ASP:OD1	1:B:464:GLY:HA3	2.11	0.51
1:B:188:TRP:O	1:B:189:TRP:HB2	2.10	0.51
1:C:187:LYS:HB2	1:C:253:LEU:HB3	1.92	0.51
1:C:85:ARG:O	1:C:88:GLU:HG2	2.10	0.50
1:A:85:ARG:O	1:A:88:GLU:HG2	2.11	0.50
1:A:458:GLY:CA	1:C:561:GLU:HG2	2.42	0.50
1:B:164:GLU:OE1	1:B:182:LYS:HE3	2.12	0.50
1:D:583:LEU:HD11	1:D:593:LEU:HD22	1.94	0.50
1:A:208:ILE:O	1:A:209:LYS:HD3	2.11	0.49
1:A:187:LYS:O	1:A:252:PHE:HA	2.12	0.49
1:B:187:LYS:O	1:B:252:PHE:HA	2.13	0.49
1:A:83:THR:HG22	1:A:143:ARG:NH1	2.28	0.48
1:C:187:LYS:O	1:C:252:PHE:HA	2.13	0.48
1:C:557:ILE:O	1:C:561:GLU:HG3	2.13	0.48
1:D:83:THR:HG22	1:D:143:ARG:NH1	2.28	0.48
1:D:273:GLU:OE2	1:D:279:ILE:HD11	2.13	0.48
1:D:2:VAL:HG13	1:D:3:HIS:H	1.77	0.48
1:C:203:VAL:HG22	1:C:217:THR:HG22	1.95	0.48
1:C:2:VAL:HG13	1:C:3:HIS:H	1.79	0.47
1:D:203:VAL:HG22	1:D:217:THR:HG22	1.96	0.47
1:A:203:VAL:HG22	1:A:217:THR:HG22	1.96	0.47
1:A:583:LEU:HD11	1:A:593:LEU:HD22	1.95	0.47
1:D:488:ILE:HG13	1:D:489:THR:N	2.28	0.47
1:D:187:LYS:O	1:D:252:PHE:HA	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:387:THR:O	1:D:391:LYS:HG2	2.15	0.47
1:C:83:THR:HG22	1:C:143:ARG:NH1	2.31	0.46
1:D:187:LYS:HB2	1:D:253:LEU:HB3	1.96	0.46
1:B:83:THR:HG22	1:B:143:ARG:NH1	2.30	0.46
1:D:301:GLY:O	1:D:305:MET:HG2	2.15	0.46
1:C:368:VAL:HG23	1:C:368:VAL:O	2.14	0.46
1:B:301:GLY:O	1:B:305:MET:HG2	2.16	0.46
1:C:158:THR:HB	1:C:159:ASN:H	1.53	0.46
1:A:187:LYS:HB2	1:A:253:LEU:HB3	1.97	0.46
1:A:169:TYR:OH	1:A:274:ALA:HA	2.16	0.45
1:C:301:GLY:O	1:C:305:MET:HG2	2.17	0.45
1:A:321:ARG:HH21	1:A:321:ARG:CG	2.25	0.45
1:A:501:ARG:O	1:A:505:LYS:HB2	2.16	0.45
1:A:529:VAL:HG23	1:B:338:GLN:HG2	1.97	0.45
1:A:557:ILE:O	1:A:561:GLU:HG3	2.17	0.45
1:A:183:ILE:CD1	1:B:638:GLU:HA	2.47	0.45
1:B:12:ASP:O	1:B:13:ASN:C	2.55	0.44
1:D:159:ASN:OD1	1:D:159:ASN:N	2.45	0.44
1:A:339:THR:HG21	1:B:438:MET:CG	2.47	0.44
1:A:388:SER:HB3	1:A:440:MET:O	2.18	0.44
1:B:382:ASP:OD2	1:B:466:LEU:HB2	2.18	0.44
1:C:228:HIS:CD2	1:D:658:VAL:HG11	2.53	0.44
1:A:584:GLU:O	1:B:590:SER:HB2	2.18	0.44
1:B:242:LYS:NZ	1:B:250:ASN:OD1	2.37	0.44
1:C:169:TYR:OH	1:C:274:ALA:HA	2.17	0.43
1:A:321:ARG:CG	1:A:321:ARG:NH2	2.82	0.43
1:C:59:ASP:OD1	1:C:78:LYS:NZ	2.52	0.43
1:A:301:GLY:O	1:A:305:MET:HG2	2.19	0.43
1:C:152:THR:HB	1:C:157:GLY:HA2	2.00	0.43
1:C:658:VAL:HA	1:C:662:LEU:HB2	1.99	0.43
1:B:118:VAL:O	1:B:122:PRO:HG2	2.19	0.43
1:A:189:TRP:N	1:A:190:PRO:CD	2.82	0.42
1:B:203:VAL:HG22	1:B:217:THR:HG22	2.00	0.42
1:A:83:THR:HG22	1:A:143:ARG:HH11	1.84	0.42
1:A:85:ARG:HE	1:A:88:GLU:CD	2.23	0.42
1:A:658:VAL:HA	1:A:662:LEU:HB2	2.02	0.42
1:C:484:PRO:O	1:C:485:ASN:CB	2.67	0.42
1:C:273:GLU:C	1:C:275:ASP:N	2.73	0.42
1:D:59:ASP:OD1	1:D:78:LYS:NZ	2.53	0.42
1:D:158:THR:HB	1:D:159:ASN:H	1.61	0.42
1:A:59:ASP:OD1	1:A:78:LYS:NZ	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:152:THR:HB	1:D:157:GLY:HA2	2.02	0.41
1:D:189:TRP:N	1:D:190:PRO:CD	2.84	0.41
1:A:118:VAL:O	1:A:122:PRO:HG2	2.21	0.41
1:C:593:LEU:HD12	1:C:593:LEU:HA	1.93	0.41
1:B:152:THR:HB	1:B:157:GLY:HA2	2.02	0.41
1:C:80:THR:HG21	1:D:661:TYR:HB3	2.02	0.41
1:A:115:LEU:HD13	1:A:191:GLY:HA3	2.01	0.41
1:A:658:VAL:HG11	1:B:228:HIS:CD2	2.56	0.41
1:B:382:ASP:HB3	1:B:466:LEU:HD12	2.03	0.41
1:C:189:TRP:N	1:C:190:PRO:CD	2.83	0.41
1:C:638:GLU:HA	1:D:183:ILE:CD1	2.51	0.41
1:B:189:TRP:N	1:B:190:PRO:CD	2.84	0.41
1:A:333:LYS:O	1:A:336:GLU:HB2	2.21	0.41
1:C:118:VAL:O	1:C:122:PRO:HG2	2.21	0.41
1:A:367:ARG:HB3	1:A:367:ARG:CZ	2.51	0.40
1:C:333:LYS:O	1:C:336:GLU:HB2	2.21	0.40
1:B:156:HIS:NE2	1:B:164:GLU:OE2	2.54	0.40
1:D:628:VAL:O	1:D:631:ARG:HG3	2.21	0.40
1:D:83:THR:HG22	1:D:143:ARG:HH11	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	621/684 (91%)	601 (97%)	18 (3%)	2 (0%)	41	68
1	B	625/684 (91%)	606 (97%)	17 (3%)	2 (0%)	41	68
1	C	622/684 (91%)	607 (98%)	12 (2%)	3 (0%)	29	57
1	D	616/684 (90%)	600 (97%)	13 (2%)	3 (0%)	29	57
All	All	2484/2736 (91%)	2414 (97%)	60 (2%)	10 (0%)	34	62

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	189	TRP
1	B	189	TRP
1	C	189	TRP
1	D	189	TRP
1	B	158	THR
1	C	485	ASN
1	D	158	THR
1	C	158	THR
1	D	488	ILE
1	A	325	ILE

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	529/579 (91%)	502 (95%)	27 (5%)	24 52
1	B	533/579 (92%)	517 (97%)	16 (3%)	41 72
1	C	531/579 (92%)	514 (97%)	17 (3%)	39 69
1	D	528/579 (91%)	505 (96%)	23 (4%)	28 58
All	All	2121/2316 (92%)	2038 (96%)	83 (4%)	32 63

All (83) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	VAL
1	A	39	MET
1	A	42	ARG
1	A	152	THR
1	A	182	LYS
1	A	209	LYS
1	A	226	LYS
1	A	271	LYS
1	A	277	THR
1	A	298	MET

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Mol	Chain	Res	Type
1	A	299	LEU
1	A	300	THR
1	A	319	VAL
1	A	321	ARG
1	A	339	THR
1	A	361	THR
1	A	387	THR
1	A	442	LEU
1	A	473	ARG
1	A	482	ARG
1	A	485	ASN
1	A	489	THR
1	A	520	ARG
1	A	547	PHE
1	A	608	ARG
1	A	659	ASP
1	A	662	LEU
1	B	156	HIS
1	B	158	THR
1	B	297	TYR
1	B	298	MET
1	B	299	LEU
1	B	319	VAL
1	B	322	GLN
1	B	339	THR
1	B	382	ASP
1	B	387	THR
1	B	440	MET
1	B	483	VAL
1	B	489	THR
1	B	547	PHE
1	B	608	ARG
1	B	659	ASP
1	C	40	ARG
1	C	156	HIS
1	C	158	THR
1	C	182	LYS
1	C	299	LEU
1	C	319	VAL
1	C	361	THR
1	C	387	THR
1	C	443	GLN

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Mol	Chain	Res	Type
1	C	473	ARG
1	C	489	THR
1	C	520	ARG
1	C	547	PHE
1	C	608	ARG
1	C	638	GLU
1	C	659	ASP
1	C	662	LEU
1	D	156	HIS
1	D	158	THR
1	D	159	ASN
1	D	173	THR
1	D	174	GLN
1	D	226	LYS
1	D	299	LEU
1	D	300	THR
1	D	319	VAL
1	D	322	GLN
1	D	339	THR
1	D	361	THR
1	D	364	LEU
1	D	387	THR
1	D	473	ARG
1	D	482	ARG
1	D	488	ILE
1	D	489	THR
1	D	520	ARG
1	D	547	PHE
1	D	608	ARG
1	D	649	LEU
1	D	659	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	228	HIS
1	B	322	GLN
1	C	322	GLN
1	D	322	GLN
1	D	328	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	629/684 (91%)	-0.11	4 (0%)	89	89	23, 38, 58, 78	0
1	B	633/684 (92%)	-0.23	3 (0%)	91	90	20, 32, 51, 67	0
1	C	630/684 (92%)	-0.23	4 (0%)	89	89	19, 32, 51, 75	0
1	D	626/684 (91%)	-0.22	4 (0%)	89	89	22, 35, 52, 71	0
All	All	2518/2736 (92%)	-0.20	15 (0%)	89	89	19, 34, 54, 78	0

All (15) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	517	GLY	3.3
1	A	486	GLY	2.9
1	A	365	TYR	2.9
1	C	127	GLN	2.6
1	D	275	ASP	2.5
1	A	439	VAL	2.5
1	B	487	GLY	2.5
1	C	517	GLY	2.4
1	C	365	TYR	2.4
1	D	483	VAL	2.4
1	A	158	THR	2.3
1	D	487	GLY	2.2
1	C	158	THR	2.2
1	B	439	VAL	2.1
1	D	158	THR	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.